

Hydraulic test pumps

- Model CPP1000-M and CPP1000-L
- Model CPP1000-X and CPP1600-X

- Model CPP5000-X and CPP7000-X

WIKA Data Sheet CT 91.05

Applications

- Simple pressure generation for laboratories, workshops or on site
- For testing, adjusting and calibrating all types of pressure measuring instruments
- Hydraulic pressure generation up to 7,000 bar

Special Features

- Ergonomic handling via a smooth-running precision spindle within the pump body
- Integrated oil reservoir
- Removable star handle
- Freely rotating test connections (meaning the instruments can be orientated as required)
- Proven technology from the CPB5000 pressure balance

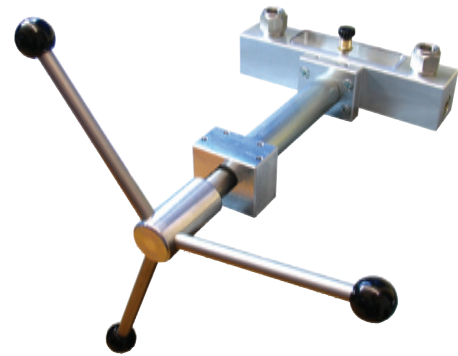
Description

Areas of application

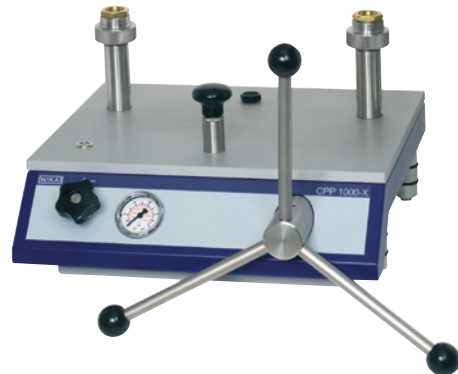
Test pumps are used to generate pressure for testing, adjusting and calibrating mechanical and electronic pressure measuring instruments by means of comparison measurements. These pressure tests can be carried out in laboratories, workshops or on site at the measuring point.

Ease of use

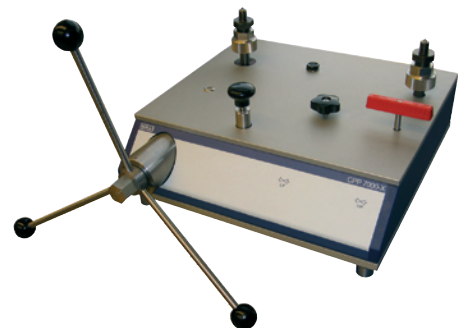
If the device under test and a sufficiently-accurate reference measuring instrument are connected to the test pump, when it is actuated, the same pressure will act on both measuring instruments. The device under test can then be calibrated or adjusted by comparing the two measured values at any pressure value.



Hand Spindle Pump CPP1000-M



Comparison Test Pump CPP1000-X



Comparison Test Pump CPP7000-X

CPP-X series offers excellent ease-of-use

The test pumps are equipped with a precision spindle, making it possible to approach measuring points precisely. In particular, the smooth-running hand spindle enables this even at very high pressures. In addition, the CPP series pumps feature a threaded spindle which only runs within the pump body. Thus there is no adverse bending moment acting on the spindle when it is fully open, and, particularly for field use, this also has the advantage that the dimen-

sions of these pumps will not change as the spindle is turned during operation.

With the CPP-X models large test volumes can be easily filled and pre-compressed using the integrated initial pressure pump.

The CPP-X models are extremely robust due to their rugged design and, with the proven technology from the CPB5000 pressure balance, they offer exceptional ease-of-use.

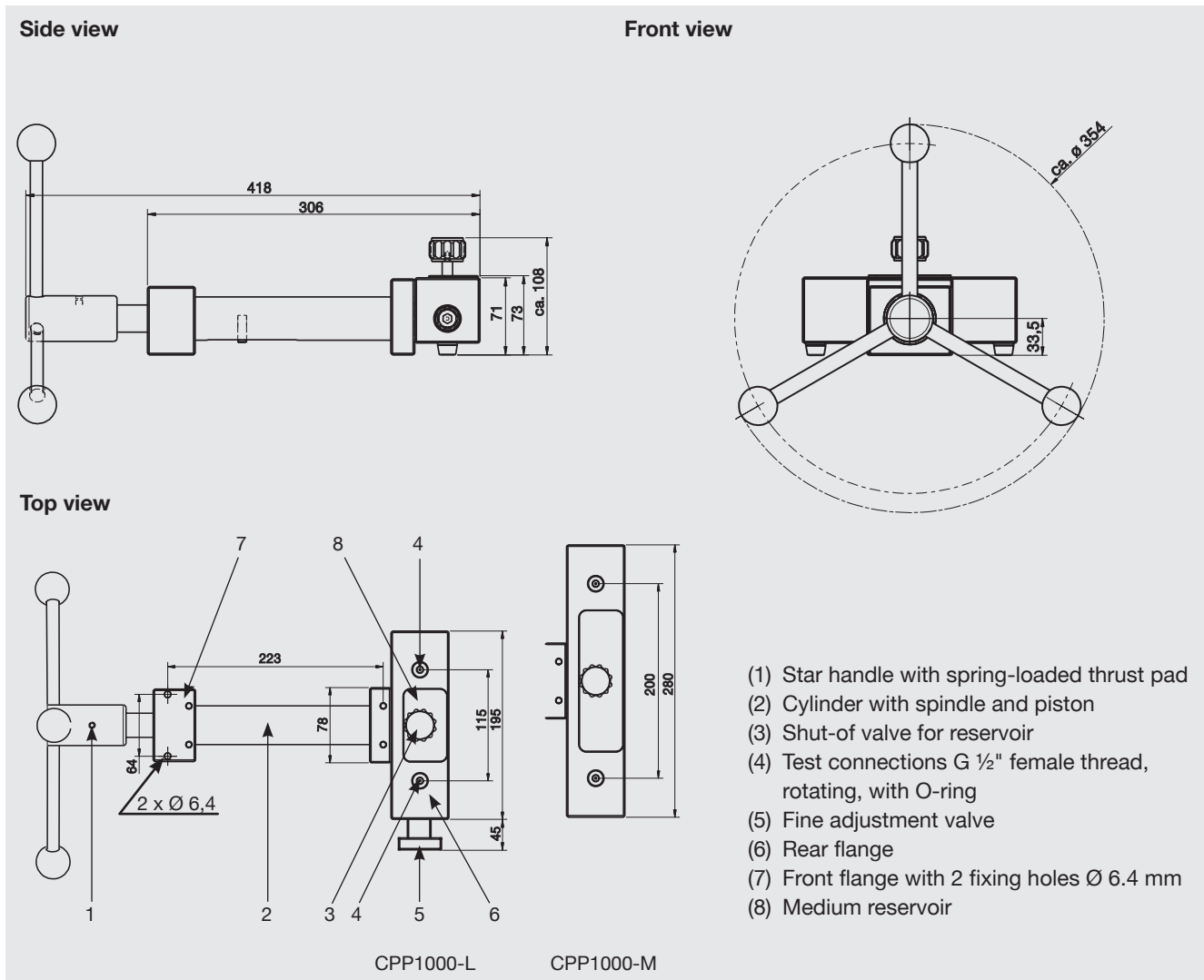
Model CPP1000-M and CPP1000-L hydraulic hand spindle pumps, up to 1,000 bar

With their compact dimensions and low weight, the CPP1000-M and CPP1000-L hand spindle pumps are the most basic models in the CPP hydraulic test pump range. They have been designed primarily for examining and calibrating gauges with small volumes. Test specimens and reference equipment with larger volumes should be pre-filled either off-line from the test pump or simply and directly from the hand spindle pump, with the help of the test connection shut-off valves (available as accessories).

The CPP1000-L is the portable version with narrow back flange, sealed reservoir and integrated fine adjustment valve as standard. For the CPP1000-M, the fine adjustment valve, available as an option, can be integrated. When the fine adjustment valve is used, only one shut-off valve can be fitted for a test connection.

The test connections have a G 1/2" female thread. To calibrate instruments with different connection threads, appropriate threaded adapters are available (see Accessories).

Dimensions in mm

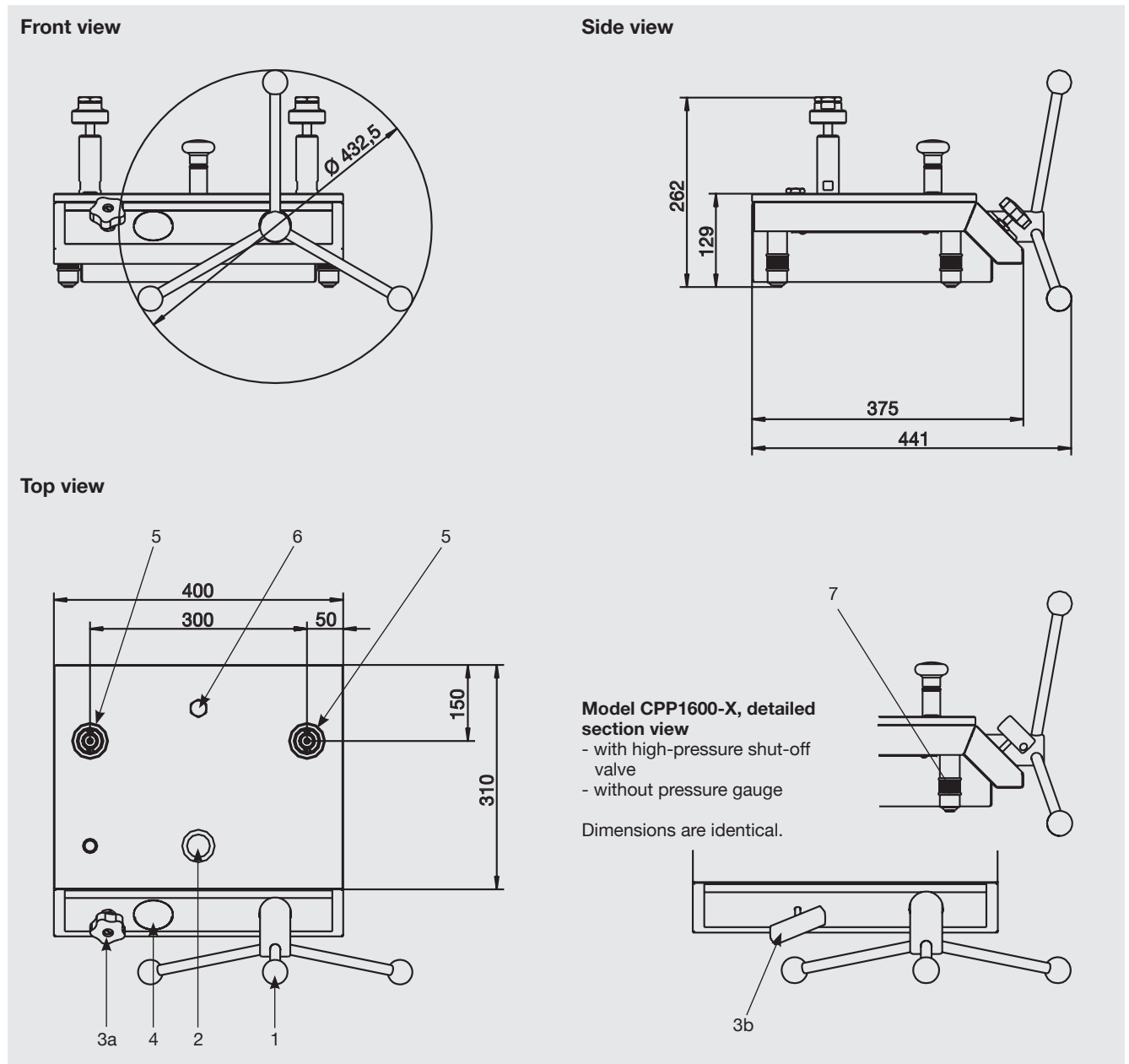


Model CPP1000-X and CPP1600-X hydraulic comparison test pumps, up to 1,000 bar and 1,600 bar respectively

The CPP1000-X and CPP1600-X comparison test pumps have been designed around a solid platform and, with the proven technology from the CPB5000 pressure balance, offer exceptional ease-of-use. With the integrated initial pressure pump and the 250 ml tank, large test volumes can also be easily filled and pre-compressed.

The two test connections on both pump models are equipped with quick-connectors with a knurled nut and interchangeable threaded adapters (G 1/2" female threads are standard). To calibrate instruments with different connection threads, appropriate threaded adapters are available (see Accessories).

Dimensions in mm



- (1) Spindle pump with star handle
- (2) Initial pressure pump
- (3a) Shut-off valve 1,000 bar
- (3b) High-pressure shut-off valve 1,600 bar
- (4) Pressure gauge for test pressure

- (5) Test connections (quick-connector with G 1/2" female thread, changeable, rotating, with O-ring)
- (6) Screwed drain plug for reservoir
- (7) Rotating base

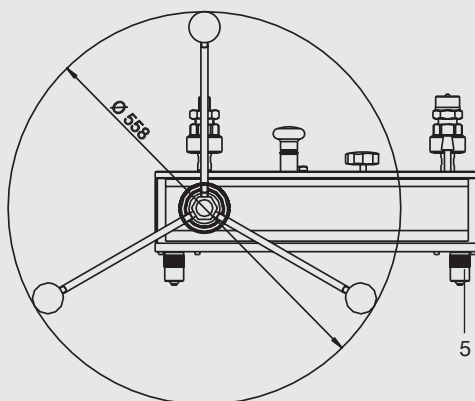
Model CPP5000-X and CPP7000-X hydraulic comparison test pumps, up to 5,000 bar and 7,000 bar respectively

The CPP5000-X and CPP7000-X comparison test pumps have been designed around a solid platform and, with the proven technology from the CPB5000-HP high-pressure balance, offer exceptional ease-of-use. With the integrated initial pressure pump and the 250 ml tank, large test volumes can also be easily filled and pre-compressed.

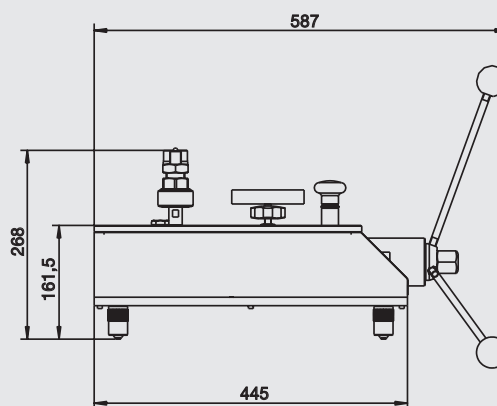
The two test connections on both pump models are equipped with a knurled nut and interchangeable threaded adapters with sealing cones (M16 x 1.5 male threads are standard). To calibrate instruments with different connection threads, appropriate threaded adapters are available (see Accessories).

Dimensions in mm

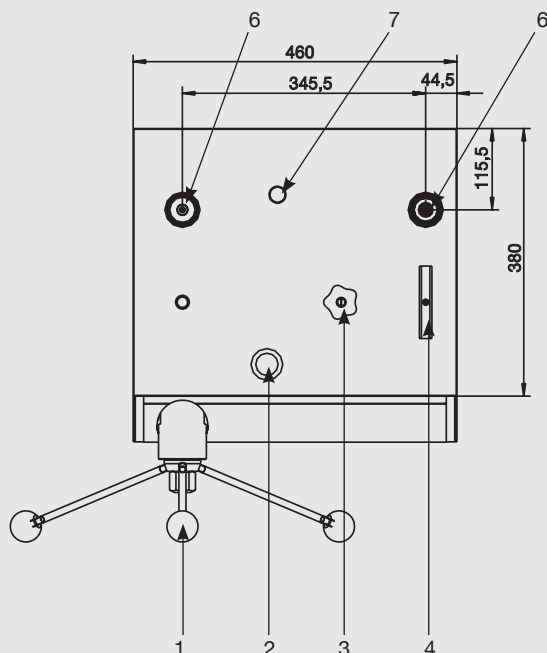
Front view



Side view



Top view



The dimensions of both pump types are identical.

- (1) Spindle pump with star handle
- (2) Initial pressure pump
- (3) Low-pressure shut-off valve (LP)
- (4) High-pressure shut-off valve (HP)
- (5) Rotating base
- (6) Test connections (knurled nut with threaded adapters M16 x 1.5 male thread, changeable, rotating, with sealing cone)
- (7) Screwed drain plug for reservoir

Specifications		CPP1000-M	CPP1000-L	CPP1000-X CPP1600-X	CPP5000-X CPP7000-X
Pressure range	bar	0 ... 1,000		0 ... 1,000 resp. 0 ... 1,600	0 ... 5,000 resp. 0 ... 7,000
Medium		Mineral oil based hydraulic fluid / clean water, free of calcium-carbonate / scale ¹⁾		Mineral oil based hydraulic fluid / clean water, free of calcium-carbonate / scale ¹⁾	Sebacate-oil
Pressure connections		2 x G 1/2" female thread, rotating, with O-ring		2 x quick connector G 1/2" female thread, rotating changeable, with O-ring	2 x M16 x 1.5 male thread rotating, changeable with sealing cone
Test connections distance	mm	200	115	300	346
Liquid reservoir	cm ³	110	55	250	250
Piston diameter	mm	8		8	7.5
Swept volume per revolution	cm ³	approx. 0.1		approx. 0.1	approx. 0.08
Overall swept volume	cm ³	approx. 3.9		approx. 3.9	approx. 2.5
Pressure fine adjustment		optional see accessories	fine adjustment valve on the side	-	-
Required moment at					
250 bar	Nm	2.0		2.0	1.5
500 bar	Nm	4.0		4.0	3.0
1000 bar	Nm	8.0		8.0	6.0
2500 bar	Nm	-		-	15
5000 bar	Nm	-		-	30
7000 bar	Nm	-		-	42
Material					
■ Cylinder		brass		brass	stainless steel
■ Piston		stainless steel		stainless steel	hardened steel
■ Tubing		-		stainless steel 1.4404 6 x 2 mm	stainless steel 1.4404 6 x 2 mm
■ Rear flange		aluminium		aluminium	-
■ Seals		FKM, NBR (standard) optional EPDM		FKM, NBR (standard) optional EPDM	NBR
Fixed mounting		two through holes Ø 6.4 mm in the front flange		solid platform	stable base
Dimensions (L x W x H)	mm	420 x 280 x 103	420 x 240 x 103	400 x 375 x 265	460 x 445 x 265
Weight	kg	6.3	5.6	20	32.5

1) Other pressure transmission media available on request.

Recommended reference instruments:

■ Model CPH6200 Hand-Held Pressure Indicator

Measuring range: up to 1,000 bar
Accuracy: 0.2 % of span
Specifications according data sheet CT 11.01

■ Model CPH6000 ProcessCalibrator

Measuring range: up to 1,000 bar
Accuracy: 0.025 % of span
Specifications according data sheet CT 15.01

■ Model HP-1 High-pressure Transmitter

Measuring range: up to 8,000 bar
Accuracy: 0.5 % of span
Specifications according data sheet PE 81.29

Calibration software:

■ EasyCal calibration software

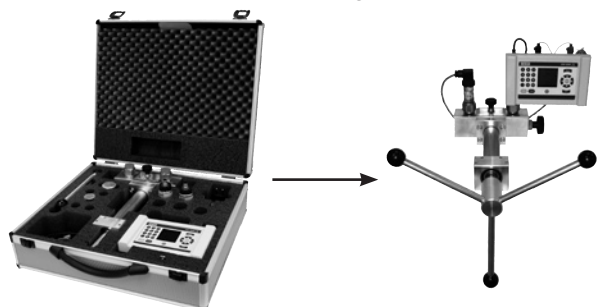
For monitoring inspection test equipment monitoring incl. generation of calibration reports and archiving of calibration data
Specifications according data sheet CT 95.01



Example: Calibration assembly for the CPP1000-M with a CPH6000 as the reference instrument and a pressure transmitter for the test specimen.

Complete test and service sets with pressure generation

Test and calibration service set with CPH6200 Hand-Held pressure instrument or CPH6000 Process Calibrator and CPP1000-L test pump consisting of:



- Transport case with CPH6200 or CPH6000 digital instrument
- CPP1000-L hydraulic hand spindle pump, up to 1,000 bar
- Various seals
- Sensor cable
- Charger
- Space for different CPT reference pressure sensors

More technical data: see data sheet CT 11.01 or CT 15.01

Test and calibration service sets are also available with the CPP30 pneumatic hand test pump, -0.95 up to +35 bar.

Accessories for CPP1000-M and CPP1000-L

Ordering data; accessories for CPP1000-M and CPP1000-L	Order No.
Operating fluid for CPP1000 and CPP1600 test pump series in plastic bottle, contents 1 litre	2099882
Shut-off valve for test connection, enabling instruments with a large volume to be easily filled with pressure transmitting medium directly at the hand spindle pump. Max. permissible pressure: 1,000 bar For devices under test and reference instruments with a large volume we recommend 2 shut-off valves.	11208384
Optional fine adjustment valve for fitting to CPP-1000-M; enables a precise approach to the measuring point	11248351
Blind plug G 1/2" male thread, mat.: brass	11155230
Set of O-rings consisting of 10 spare sealings for pressure ports, mat.: FKM	12422487
Threaded adapter G 1/2" male thread on G 1/8" female thread, mat.: brass	9090207
Threaded adapter G 1/2" male thread on G 1/4" female thread, mat.: brass	9090231
Threaded adapter G 1/2" male thread on G 3/8" female thread, mat.: brass	9090266
Threaded adapter G 1/2" male thread on M20 x 1.5 female thread, mat.: brass	9090355
Threaded adapter G 1/2" male thread on 1/4 NPT female thread, mat.: brass	0187119
Threaded adapter G 1/2" male thread on 1/2 NPT female thread, mat.: brass	0187143
Angle connection 90° for test specimens with back mounting connection	1564838

Accessories for CPP1000-X and CPP1600-X

Ordering data; accessories for CPP1000-X and CPP1600-X	Order No.
Operating fluid for CPP1000 and CPP1600 test pump series in plastic bottle, contents 1 litre	2099882
Set of O-rings consisting of: 5 pieces 8 x 2 and 5 pieces 4 x 2.2	12328562
Set of adapters for the quick-connector in a case with threaded inserts G 1/4", G 3/8", 1/2 NPT, 1/4 NPT and M20 x 1.5 for mounting to the knurled nut	2036941
Angle connection 90° for test specimens with back mounting connection	1564838

Accessories for CPP5000-X and CPP7000-X

Ordering data; accessories for CPP5000-X and CPP7000-X	Order No.
Operating fluid for CPP5000 and CPP7000 test pump series in plastic bottle, contents 0.5 litre	11123150
Threaded adapter M16 x 1.5 male thread with sealing cone, mat.: hardened stainless steel	11093740
Threaded adapter M20 x 1.5 male thread with sealing cone, mat.: hardened stainless steel	11093901
Threaded adapter 9/16-18 UNF male thread with sealing cone, mat.: hardened stainless steel	11093871
Threaded adapter G 1/2" female thread with O-ring, max. 1,600 bar, mat.: 1.4571	11095912

Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing. Modifications may take place and materials specified may be replaced by others without prior notice.

